

NUMBERS & ODDITIES
a.k.a. the Spooks Newsletter
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First of all I wish all "Numbers and Oddities"
contributors a FANTASTIC NEW YEAR!

Thanks for your contributions in 2006 and I look
forward to receiving even more logs in 2007.

CHEERS!!!

December was a dull month until Jon-FL sent a note about our Cuban friends. They already adopted a new voice for V02a and on 27 and 28 December they transmitted in PSK-31. Read all about it in the MORSE section. ENIGMA 2000 reports a new numbers station. See E27 in the VOICE section.

This month's unid stations are listed in the "Utility Round-up" section.

As always N&O publishes Mathias Kropf's annual Clandestine Activity Survey. Here is the 2006 edition.

During 2006 the activity of political clandestine stations broadcasting on shortwave has increased by 5.4 % to 1260 WBHs (Weekly Broadcasting Hours). This is the result of the latest Clandestine Activity Survey which has been compiled annually since 1986.

Activity of clandestine stations broadcasting to target areas on the Asian continent has increased by 3 % to 870 WBHs and activity to target areas on the African continent has increased by the same percentage amount to 197 WBHs. On the American continent the increase was 19 % to now 193 WBHs.

The three most active target areas worldwide are now China with 200 WBHs (+122 when compared with the previous year), Afghanistan with 196 WBHs (+6) and Cuba with 193 WBHs (+31). Activity to Iraq which had been the most active target area each year since 1994 has dropped considerably.

The number of different target areas active worldwide has decreased by one

to 24. While Syria and Pakistan are considered to be no longer active, Libya has been listed for the first time since 1990.

* VOICE STATIONS *

::: E03 LINCOLNSHIRE POACHER

Idents compiled by Alpha Vax.

First half of the month:

UTC	Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC
1200	99817	99817	99817	99817	99817	99817	99817	1200
1300	37094	37094	37094	37094	37094	37094	37094	1300
1400	57493	43679	40936	70738	99817	76482	29546	1400
1500	29546	57493	43679	40936	70738	99817	91315	1500
1600	91315	29546	57493	43679	40936	70738	76482	1600
1700	76482	91315	29546	57493	43679	40936	99817	1700
1800	99817	76482	91315	29546	57493	43679	70738	1800
1900	70738	37094	76482	37094	29546	57493	37094	1900
2000	37094	99817	37094	91315	37094	29546	40936	2000
2100	40936	70738	99817	76482	91315	37094	43679	2100
2200	43679	40936	70738	99817	76482	91315	57493	2200

Second half of the month:

UTC	Mon	Tue	Wed	Thu	Fri	Sat	Sun	UTC
1200	54876	54876	54876	54876	54876	54876	54876	1200
1300	58811	58811	58811	58811	58811	58811	58811	1300
1400	40892	89780	42963	98385	54876	30851	98300	1400
1500	98300	40892	89780	42963	98385	54876	64813	1500
1600	64813	98300	40892	89780	42963	98385	30851	1600
1700	30851	64813	98300	40892	89780	42963	54876	1700
1800	54876	30851	64813	98300	40892	89780	98385	1800
1900	98385	58811	30851	58811	98300	40892	58811	1900
2000	58811	54876	58811	64813	58811	98300	42963	2000
2100	42963	98385	54876	30851	64813	58811	89780	2100
2200	89780	42963	98385	54876	30851	64813	40892	2200

<<<<<<<<<-0-0-0-0-0-0-0-0-0-0->>>>>>>>>>

::: E06

<<<<<<<<<<-0-0-0-0-0-0-0-0-0-0->>>>>>>>>>

::: E27

ENIGMA 2000 reports a new numbers station. Here is an extract from the E2K newsletter #38.

Transmissions have been heard on Tuesday, Thursday, Friday and Sunday, but not every week, on either 16270 or 10915 at 1530 UTC, with a possible tuning tone for 30 secs an hour or so earlier. The transmissions ended with 69785 11111 or with 47411 11111. The same message has been sent between 03 and 22 December.

Details:

Family 0, E27, OM, English. Heard 16270 / 10915 kHz USB at 1530 UTC. 5FGs.

Carrier up 5 mins prior

Long 1k tuning tone followed by 5 long dashes

```
"message, group nn, message
```

Into message, pauses after 10 groups

Ending "message end"

Note that the pronunciation of "message-er" is distinctive.

This is the complete TX of 03 / 12 / 17 / 22 Dec 06

Message, Group 20, Message

32031 96514 74587 21459 75624 30124 63658 87488 96521 63214 pause

(2.7 secs as opposed to 1.7secs, average, inter-group spacing)

63255 94541 63250 76511 75899 41253 64121 95688 47411 11111

Message End (note that the GC includes the last stutter group)

<<<<<<<<<-0-0-0-0-0-0-0-0-0-0->>>>>>>>>>

::: V02

Mark found out that V02 is using a new voice and writes on 10 Dec.:

"The new voice on the Cuban networks is now broadcasting at 1600z on 7975m. The callup is: A 82922 38802 01670. You should be able to pick up the repeat at 1700z on 8010m. Note, that she uses "0" as the last number in the third callup. Any ideas why?

I find her easier to understand than the old voice. She enunciates the numbers much clearer. At present the Cubans are using this voice sparingly. You might also check these skeds today, to see if they use the new M8a format also, plus another V2a later.

1800z 8097m MCW M8a

1900z 8097m MCW M8a

11111 28/12/2006 11111 28/12/2 11111d8/12/2006 11111 28/12/2006 111
50243 50243 50243 50243 50s3 55382 48612 00640 24267 24845
51614 30063 43610 02482 60566 72540 52116 86043 22252 73082
57167 84370 87754 61884 00771 44486 16407 36583 34861 82130
33277 06236 26402 44864 52731 01556 06414 03318 23254 88217
38101 26360 53635 66443 57122 00331 38057 56732 05111 70613
52354 08535 67380 67578 23836 64731 6333

11111 28/12/2006 11111 28/12/2 11111d8/12/2006 11111 28/12/2006 111
50243 50243 50243 50243 50s3 55382 48612 00640 24267 24845
51614 30063 43610 02482 60566 72540 52116 86043 22252 73082
57167 84370 87754 61884 00771 44486 16407 36583 34861 82130
33277 06236 26402 44864 52731 01556 06414 03318 23254 88217
38101 26360 53635 66443 57122 00331 38057 56732 05111 70613
52354 08535 67380 67578 23836 64731 6333

22222 28/12/2006 22222 28/12/2006 22222 28/12/2006 22222 28/12/2006 22222
83613 83613 83613 83613 83613 74750 23485 02855 51783 85733
00537 22283 13110 41418 02042 26361 01842 65522 63213 04118
5676

11111 28/12/2006 11111 28/12/2006 11111 28/12/2006 11111 28/12/2006 11111
50243 50243 50243 50243 50243 55382 48612 00640 24267 24845
51614 30063 43610 02482 60566 72540 52116 86043 22252 73082
57167 84370 87754 61884 00771 44486 16407 36583 3486 82130
33277 06236 26402 44864 52731 01556 06414 03318 23254 88217
38101 26360 53635 66443 57122 00331 38057 56732 05111 70613
52354 08535 67380 67578 23836 64731 63336 82745 02237 83875
86244 55566 76248 24765 44434 88523 47743 38301 04874 33015
14660 17023 54050 75828 66880 11110 63854 46211 01128 86381
61307 57251 18082 35115 12125 25561 40724 23441 22373 82888
84715 86311 42277 80846 63500 78347 00232 32578 64112 57315
05805 27615 14644 48835 37533 16671 35056 85134 47543 51788
76516 45144 03107 54325 83762 44181 07617 67360 03857 86202
65716 03213 10888 08631 58184 52211 51575 64736 60022 18607
62231 60124 81184 51302 64013 70334 78528 62346 41628 31267
67763 58047 67071 38647 70853 67567 67600 31008 75603 25764
05548 81014 68577 77543 71268 + + + 50243 50243 50243 50243
50243 55382 48612 00640 24267 24845 51614 30063 43610 02482
60566 72540 52116 86043 22252 73082 57167 84370 87754 61884
00771 44486 16407 36583 34861 82130 33277 06236 26402 44864
52731 01556 06414 03318 23254 8827 38101 26360 53635 66443
57122 00331 38057 56732 05111 70613 52354 08535 67380 67578
23836 64731 63336 82745 02237 83875 86244 55566 76248 24765
44434 88523 47743 38301 04874 33015 14660 17023 54050 75828
66880 11110 63854 46211 01128 86381 61307 57251 18082 35115
12125 25561 40724 23441 22373 82888 84715 86311 42277 80846
63500 78347 00232 32578 64112 57315 05805 27615 14644 48835

37533 16671 35056 85134 47543 51788 76516 45144 03107 54325
 83762 44181 07617 67360 03857 86202 65716 03213 10888 08631
 58184 52211 51575 64736 60022 18607 62231 60124 81184 51302
 64013 70334 78528 62346 41628 31267 67763 58047 67071 38647
 70853 67567 67600 31008 75603 25764 05548 81014 68577 77543
 71268 + + + 50243 50243 50243 50243 50243 55382 48612 00640
 24267 24845 51614 30063 43610 02482 60566 72540 52116 86043
 22252 73082 57167 84370 87754 61884 00771 44486 16407 36583
 34861 82130 33277 06236 26402 44864 52731 01556 06414 03318
 23254 88217 38101 26360 53635 66443 57122 00331 38057 56732
 05111 70613 5354 08535 67380 67578 23836 64731 63336 82745
 02237 8387586244 55566 76248 247

27 Dec, 2100 UTC, 6855 kHz

22222 28/12/2006 22222 28/12/2006 22222 28/12/2006 22222 28/12/2006 22222
 83613 83613 83613 83613 83613 74750 23485 02855 51783 85733
 00537 22283 13110 41418 02042 26361 01842 65522 63213 04118
 56765 38514 00863 38288 54787 80012 80833 74578 65487 87054
 05727 52632 36583 02134 88587 47515 15301 24478 50162 10512
 47048 38176 68243 83120 42400 56757 8141

N/2006 11111

50243 50243 50243 50243 50243 55382 48612 00640 24267 24845
 51614 30063 43610 02 r 4

11111 28/12/2006 11111 28/12/2006 11111 28/12/2006 11111 28/12/2006 11111
 50243 50243 50243 50243 50243 55382 48612 00640 24267 24845
 51614 30063 43610 02482 60566 72540 52116 86043 22 52 73082
 57167 84370 87754 61884 00771 44486 16407 36583 34861 82130
 33277 06236 26402 44864 52731 01556 06414 03318 23254 88217
 38101 26360 53635 66443 57122 00331 38057 56732 05111 70613
 52354 08535 67380 67578 23836 64731 63336 82745 02237 83875
 86244 55566 76248 24765 44434 88523 47743 38301 04874 33015
 14660 17023 54050 75828 66880 11110 63854 46211 01128 86381
 61307 57251 18082 35115 12125 25561 40724 23441 22373 82888
 84715 86311 42277 80846 63500 78347 00232 32578 64112 57315
 05805 27615 14644 48835 37533 16671 35056 85134 47543 51788
 76516 45144 03107 54325 83762 44181 07617 67360 03857 86202
 65716 03213 10888 0j631 58184 52211 51575 64736 60022 18607
 62231 60124 81184 51302 64013 70334 78528 62346 41628 31267
 67763 58047 67071 38647 70853 67567 67600 31008 75603 25764
 05548 81014 68577 77543 71268 + + + 50243 50243 50243 50243
 50243 55382 48612 00640 24267 24845 51614 30063 43610 02482
 60566 72540 52116 86043 22252 73082 57167 84370 87754 61884
 00771 44486 16407 36583 34861 82130 33277 06236 26402 44864

52731 01556 06414 03318 23... ...82 .8101 26360 53635 .6443
 57122 00331 38057 56732 05111 70613 52354 08535 67380 67578
 23836 64731 63336 82745 02237 83875 86244 55566 76248 24765
 44434 88523 47743 38301 04874 33015

28 Dec, 1600 UTC, 7975 kHz

11111 28/12/2006 11111 28/12/2006 11111 28/12/2006 11111
 50243 50243 50243 50243 50243 55382 48612 00640 24267 24845
 51614 30063 43610 02482 60566 72540 52116 86043 22252 73082
 57167 84370 87754 61884 00771 44486 16407 36583 34861 82130
 33277 06236 26402 44864 52731 01556 06414 03318 23254 88217
 38101 26360 53635 66443 57122 00331 38057 56732 05111 70613
 52354 08535 67380 67578 23836 64731 63336 82745 02237 83875
 86244 55566 76248 24765 44434 88523 47743 38301 04874 33015
 14660 17023 54050 75828 66880 11110 63854 46211 01128 86381
 61307 57251 18082 35115 12125 25561 40724 23441 22373 82888
 84715 86311 42277 80846 63500 78347 00232 32578 64112 57315
 05805 27615 14644 48835 37533 16671 35056 85134 47543 51788
 76516 45144 03107 54325 83762 44181 07617 67360 03857 86202
 65716 03213 10888 08631 58184 52211 51575 64736 60022 18607
 62231 60124 81184 51302 64013 70334 78528 62346 41628 31267
 67763 58047 67071 38647 70853 67567 67600 31008 75603 25764
 05548 81014 68577 77543 71268 + + + 50243 50243 50243 50243
 50243 55382 48612 00640 24267 24845 51614 30063 43610 02482
 60566 72540 52116 86043 22252 73082 57167 84370 87754 61884
 00771 44486 16407 36583 34861 82130 33277 06236 26402 44864
 52731 01556 06414 03318 23254 88217 38101 26360 53635 66443
 57122 00331 38057 56732 05111 70613 52354 08535 67380 67578
 23836 64731 63336 82745 02237 83875 86244 55566 76248 24765
 44434 88523 47743 38301 04874 33015 14660 17023 54050 75828
 66880 11110 63854 46

Notes:

- The transmissions were a mixture of PSK-31, "new voice", high speed CW, and some other unknown digital mode.
- Transmissions were in AM mode with full side bands.
- Data: regular V02a format with one change, in the 2100 UTC transmission on 27-12 the preamble contained dates.
- The PSK transmission on the 27th was dated for the 28th (Same message transmitted on the 28th)
- A full message was transmitted in PSK mode on the 28th. 150 5FGs. No number 9 in the transmission. First 2 and Last 2 groups are different. This is consistent with the new V02a voice when a message with no 9s is transmitted.

X06 - 10240 kHz, 21-12, 0805 UTC. Mazielka. Sequence: 123456.
M42 - 14483 kHz, 31-12, 1234 UTC. Russian intel. Auto broadcasting multi figure group message to recipient "47". Mode: BAUDOT 200.33Bd/500Hz.
18240 kHz, 31-12, 1148 UTC. Dep. of State Comms Moscow offline crypto to UNID embassy after 11177 00099... Mode: MFSK-32/CROWD36.

★ MILITARY STATIONS ★

::: RUSSIAN, CIS, UKRAINIAN MILITARY SSB & CW STATIONS (including M32)

18.1 Russian Mil: RDL
2737 Russian Air Force: REA4:
3162 CIS Mil: T5D1 msg for 4VS7: "T5D1 183 23 24 0102 = 183 = 943 = FTN^W
HPTMJ ... TU^EQ WRPWA K". Then message for SMBA: "T5D1 878 25 24 0200
878 = 943 = CLYOG Q0HZS ..."
3164 CIS Mil: "ZE2D de CGIJ QBE QYT6 K"
3207 Russian Mil: TPBS radio check with K5G6 and 03JB.
3211 CIS MIL: "JHL5 de XF8I K. JHL5 de P3S0 K JHL5 de OK7B K"
3354 CIS MIL: VEDR radio check with 8C3U, NTBB and ZKFW.
3364 Russian Mil: "BU8F 234 94 22 0001 234 = ZKJ .36 = %,PPE TAX0D ..."
3933 Russian Mil "RFF" Net. RFFU and RFFch working RFFN. RFFN not heard on
Q SX freq 3132 kHz.
4179 Russian Air Force: REA4. "REA4 = 28200 23746 93215 82117 10023 90300
20069 93456 82309 10075 91300 = REA4 K"
7018 Russian Air Force: REA4
7044 Russian Air Force: REA4
7056 CIS Mil: XCP1, BB2S, K05F, TRJJ, GLA7, T5TA, MGDZ, 80N9, YW9H, ISXD,
3W0L. Radio checks.
7075 Russian Navy: RGT77. Msg 5FGs
7099 CIS Mil: "9VH8 qtc 687 20 20 1920 ZQF" followed by 4FGs.
8191.5 Russian Air Force: REA4
10201 RCV: HQ Russian Black Sea Fleet, Sevastopol. Weather msg to collective
RKZ: "RKZ de RCV QTC 936 66 9 1525 936 = Prognoz pogody ... 0020 1166 AR"
14036 Russian Air Force: REA4. 2nd harmonic of 7018 kHz.
14092 Russian Navy: "XXX XXX RGT77 11229 52939 grimasa"

★ UTILITY ROUND-UP ★

We start this section with five unid stations. All heard by Igor in the
SE part of Russia.

::: UNID 1

9803 kHz, 0528 UTC, 12-12. Mode: CW

Notes:

4-character groups

Only 10 characters were used: O, D, M, P, R, S, Z and

\$.-.- / # -.-.. / @ ..--

Sample:

• • •

pm@# z#so

ii

```
#rod p@mp z@z$ ds$r @$### ##zr od@z $mo@ oopm zmz#
```

$$= 2$$

oro@ mozr @@mo z#@r o#p@ \$dd# \$mmz mo@r ros\$ zm\$z

ar k

<<<<<<<<<-0-0-0-0-0-0-0-0-0-0->>>>>>>>>>

UNID 2

6599 kHz, 0616 UTC, 16-12. Mode: CW

Sample:

v v v v c02z de dpm5 k

r qsa2 k

rrrr e

qsl 1427 k

$$r \quad nr? \quad k$$

```
r qsk 1540 73820394 fm 383834933u e
```

fm se

```
qsk 1540 unw comm 4wtz k
```

<<<<<<<<<-0-0-0-0-0-0-0-0-0->>>>>>>>>

::: UNID 3

6424 kHz, 0140 UTC, 25-12. Mode: CW

Sample:

q4 q4 q4 (rptd)

 k

<pause>

q4 q4 q4 (rptd)

k

<pause>

q4 q4 q4 (rptd)

k

<<<<<<<<<-0-0-0-0-0-0-0-0-0-0->>>>>>>>>>

UNID 4

5349 kHz, 1513 UTC, 15-12. Mode: CW

Sample:

```
vvv 0nnz de 0l0x k
r qsa2 k
as k
ve ve ve ve vvv
qsa2 k
vvvvv qsa2 k
vvvv t0nnz de a0l0x k
r qsa2 k
r nr ? k
r nr 19 k
r qsk 0040 unw comm j7sv k
r bl sk sk
vvvv j7sv de 0l0x k
r qsa2 k
r 26 w k a7d5 k
r 28 w 73ud k
r ar g 8403 atdu k
r nr 038 k
r nr ? k
nr ? k
r nr 19 k
r qsk 0040 unw comm 0nnz k
bl sk
ok
```

<<<<<<<<<-0-0-0-0-0-0-0-0-0-0->>>>>>>>>>

::: UNID 5

5091 kHz, 0217 UTC, 22-11. Mode: CW

Sample:

```
vvv e1s (rptd)
= 4d4t443a6
? 734tn4nnnaaaa7
= tt5u4tn4aaaa7
= tn4nn33a7
= 454ad55ad
= 5u4t4duad
? 73u4aaaaan
? 73u4uaaaaan
? 73u45aaaaan
? 73u46aaaaan
? 73u47aaaaan
= tt534d5a3aaut
= tt544n7n4aaut
= tt554tud7aaut
= tt564n566aaut
```

```

= tt575n37uaaut
= tt5d6ta44aaud
? 73u4naaut
= 534dn55ut
= 5u4t443ut
= 4d4add6ua
= 5d6tau4ua
? 73u5taaua
= 544n6d6ua
= tt6t4t77aaaaua
? 7366taaua
= tt5n4t77aaaaua
= tt6t5d333aaaaua
= tt6a4nn5daauu
= tt6u4n6d3aaaui
? 7366taauu
= 554ta5auu
= tt634n453aaaui
...
```

<<<<<<<<<-0-0-0-0-0-0-0-0-0-0->>>>>>>>>>

::: DRIFT NET BUOYS

Jon-FL from Florida reports a large number of beacons. Most likely drift net buoys. Dave in Nebraska also reported one.

Frequency	Call sign	Remarks
1757.0	9107	4x with long dash each time, every 3 minutes, 9 WPM
1775.0	KW136	4x with long dash each time, every 3 minutes, 9 WPM
1781.01	93W812	20 WPM
1900.07	GW139	4x with long dash each time, every 3 minutes, 9 WPM
1901.97	JW285	4x with long dash each time, every 3 minutes, 9 WPM
1901.98	GT75	4x with long dash each time, every 3 minutes, 9 WPM
1923.71	RP96	3x with long dash each time, every 3 minutes, 9 WPM
1924.0	95W230	5x with long dash each time, every 4 minutes, 9 WPM
1934.02	96W175	4x with long dash each time, every 4 minutes, 9 WPM
1935.0	AZ91	3x with long dash each time, every 5 minutes, 7 WPM
1936.01	A12	2x with long dash each time, every 5 minutes, 5 WPM
1937.98	GP41	3x with long dash each time, every 4 minutes, 7 WPM
1937.2	HK36	3x with long dash each time, every 4 minutes, 7 WPM
2003.31	4HWC	3x every 4.5 minutes, 8 WPM
2014.88	4HED	3x with long dash each time, every 5 minutes, 3-5 WPM
2031.06	4HWB	3x with long dash each time, every 4 minutes, 3-5 WPM
2031.16	IF1	3x with long dash each time, every 4 minutes, 3-5 WPM
2043.03	4HVN	3x with long dash each time, every 4 minutes, 5 WPM
2291.93	4HLC	3x with long dash each time, every 4 minutes, 5 WPM

into Earth orbit on Dec. 11, 2006. The small satellite will carry bacteria that researchers will analyze to determine the effects of space flight on microscopic living things.

Operating at 437.075 MHz FM, the GeneSat-1 beacon sends an AX.25 packet every 5 seconds; the packet contains data about the spacecraft systems operation. The data portion of the AX.25 packet is 64 bytes long and contains only standard ASCII characters. Each character represents a HEX value. Below is an example of the 64-byte long raw data:

```
GeneSat1.org46CD0000000000000000000024006A009F0000000000C600000000
```

Depending on the TNC being use, the data string could be preceded by the following set of characters: KE7EGC>UNDEF,TELEM: which denotes sender and recipient of the packet. Ignore this when decoding the packet.

Sample:

```
KE7EGC*>TELEM>UNDEF [UI]:  
GeneSat1.orgB3A231870200006300000026006900010000000000EE00000000  
KE7EGC*>TELEM>UNDEF [UI]:  
GeneSat1.orgF4A2310000FA0000008C010000A401100000000000FB00000000  
KE7EGC*>TELEM>UNDEF [UI]:  
GeneSat1.org08A33180004C001E00010024006900010000000000FF00000000
```

ANDE and RAFT and MARScom all contain systems involving US Naval Academy Student Projects. RAFT and MARScom are complete student spacecraft and the ANDE comm system was a student project. The 4th satellite, FCAL, was built at NRL but also contains an amateur radio cubesat for its comms and telemetry. These four satellites, all operating in the Amateur Satellite Service were carried to orbit on the Space Shuttle mission STS-116 at 8:47 PM on 9 December 2006. These missions will be short due to their low altitude.

- ANDE

ANDE stands for Atmospheric Neutral Drag Experiment and is a 19" passive sphere with optical corner reflectors and 6 Lasers for precise orbit determination. The Naval Academy has been given the opportunity to construct a digital communications transponder for use in the Amateur Satellite Service to fit inside the ANDE sphere similar to what it is flying on the PCsat and PCSAT2 missions. The PCsat-like follow-on packet communications mission will continue the interest of students worldwide by letting them communicate via the satellite and capture telemetry relative to its temperature in the space environment.

Downlink mode: 1200 baud AX.25 TNC on 145.825 MHz.

Sample:

```
ANDE-1>BEACON>UI,?,F0:
```

```
>Satellite 145.825mhz US Naval Academy
ON4CHP/ANDE-1*>APRS>UI,?,F0:
=5109.59N/00449.15E-73 to all ANDE/RAFT fans,Willy -5W- on4chp@uba.be
{UISS50}
```

- RAFT

RAFT is a US Naval Academy Aerospace student satellite project designed to give students real hands on experience in satellite engineering, design and operations. The USNA RAFT will accomplish these objectives:

- Provide a 217 MHz transmitter/receiver for Navy Space Surveillance System (NSSS) Radar Fence experiments.
- Provide TDMA packet, and FDMA Multiuser PSK-31 transponders for experiments in the Amateur Satellite Service.
- Provide voice/data experiments in support of the Navy/MarineCorp MARS programs and the Naval Academy's boats.

RAFT PSK-31 Multi-user digital transponder

This transponder solves the primary problem of many amateur satellites and that is the contention on the single channel uplink. By using PSK-31, as many as 30 simultaneous users can be supported in keyboard-to-keyboard communications. Each channel is only about 60 Hz wide.

Downlink mode: 1200 baud AX.25 TNC on 145.825 MHz.

Sample:

```
RAFT/SGATE>BEACON>UI,?,F0:
T#699,086,002,036,035,085,10000000,999
RAFT/SGATE>BEACON>UI,?,F0:
T#700,086,002,036,035,085,10000000,999
```

- MARScm Satellite

The MARSCOM picosat was carried to orbit on STS-116 on 9 Dec 2006 and was activated on deployment from the shuttle at 0156z on 21 December. MARScm is one of two Naval Academy small cubesats in a two-satellite constellation as part of the RAFT project.

MARScm Mission: The mission of MARScm is to explore and demonstrate a very low cost yet viable communications capability for education and training of both Midshipmen and the large numbers of Navy Marine Corps communications cadre personnel.

Since MARScm will be hard to track and tune due to the high Doppler on the 27965.2 LSB downlink, stations will need to ping the spacecraft to hear a

downlink for tuning. For this reason, the initial operations plan for MARScom is simply to have ground stations hone their downlink tuning skills by transmitting occasional packets on the 148.975 FM uplink. While also attempting to tune in and capture any telemetry packets as well as their successful packets.

Here are the settings for your TNC:

DA YYYYMMDDHHMMSS <== to set your TNC clock

UNPROTO VIA NMARS <== to set your path via MARScom (NMARS)

MSTAMP ON

CONV

With these settings, you should be able to send a packet via NMARS each time you hit the CARRIAGE-RETURN key. Send any captured packets to the NMARS Telemetry coordinator.

The downlink will be available to all MARS stations, and the uplink will be operated as a directed net amongst authorized MARS command stations.

Downlink mode: HF LSB, 1200 baud packet on 27965.2 kHz LSB.

- FCAL

FCAL, the Fence Calibration satellite. Its name is derived from its intended use as a calibration target for the radar fence, a space surveillance system recently transitioned from the Naval Network and Space Operations Command to the Air Force 20th Space Control Squadron. The size requirement of FCAL satellite was determined by the resonant frequency of the Navy radar fence. The two hemispheres are fabricated by spin-casting brass, followed by machine finishing. The exterior of each hemisphere is nickel coated for durability in the harsh space environment. The equator consists of an anodized aluminum deck that incorporates an antennae deployment system, and mounting locations for the FCAL payload. A cubesat ballast mass is included for center of gravity symmetry.

Downlink mode: AX.25 AFSK 1200 baud on 437.385 MHz. Callsign: KD4HB0.

Sample:

Fm KD4HB0 To TELEM Via TELEM <UI pid=F0 Len=55 >[02:32:20]

0002A7BFFFEFFF8FFFF0230FFFE0138FFFE0090FFFE0238FFFF01B0

Fm KD4HB0 To TELEM Via TELEM <UI pid=F0 Len=56 >[02:32:28]

Analog 000B001C001900DB00A7002F00DE000F N 00000078

MEPSI and TACSAT-2 were also launched. So far I haven't been able to find the frequencies and modes. It is said that MEPSI's beacon transmits on 150.012 and 400.032 MHz. I have tried these frequencies during several passes but nothing was heard.

* LOGS SECTION *

2680.0 M22 4xz idling CW 27-12-2006 Wed 1950 (BNL)
3150 E10 PCD2 // 4270 kHz AM 1-12-2006 1900 (MG)
3199 M21 Russian Air Defence (PV0) 2018 CW
=992318??0????? = 992319??0????? CW 15-12-
3245.0 V02 A 41163 01671 82481 (YL/SS) AM 8-12-2006 Fri
3292.0 M08 ID 28922 30323 59911 (V2a is mixed with this
broadcast now) CW 19-12-2006 Tue 0400 (MS)
3292.0 V02 A 41161 62462 16272 (YL/SS) AM 4-12-2006 Mon
3292.0 V02 A 52802 97011 65421 (YL/SS. Repeat of 0100z
on 3389m) AM 5-12-2006 Tue 0200 (MS)
3292.0 V02 A 23380 34553 68524 (YL/SS New voice.) AM 11-
12-2006 Mon 1100 (MS)
3292.0 V02 A 52803 97013 65423 (YL/SS. Repeat of 0100z
on 3389m) AM 12-12-2006 Tue 0200 (MS)
3292.0 V02 A 09311 98101 16922 (YL/SS. Repeat of 0300z
on 4017m) AM 12-12-2006 Tue 0400 (MS)
3292.0 V02 A 64241 98103 13923 (YL/SS. This sked should
be broadcasting on AM 19-12-2006 Tue 0400 (MS)
3297 M89 V GKVZ GKVZ GKVZ DE Q7NW Q7NW CW 1-12-
3322 M21 Russian Air Defence. 990009??0?????
990010??0????? etc. CW 28-12-2006 2109 (MPJ)
3360.0 V02 A 41162 62463 16273 (YL/SS) AM 6-12-2006 Wed
3360.0 V02 A 73442 54023 15213 (YL/SS) AM 27-12-2006
3389.0 V02 A 52802 97011 65421 (YL/SS) AM 5-12-2006 Tue
3389.0 V02 A 52803 97013 65423 (YL/SS) AM 12-12-2006
3415 E10 ART2 // 5435 kHz AM 1-12-2006 1900 (MG)
3417.0 E10 Calling ART//5435kHz YL/EE 5L Msg Gr 109 =
ZBTXB ORBMY HSVWF = USB 23-12-2006 Sat
3523 M10 273 09 39, 385 99 29 CW 2-10-2006 2100 (AnEur)
3523 M10 555 273 09 39, 385 99 29 CW 4-10-2006 2100
3523 M10 555 273 09 39, 385 99 29 CW 4-10-2006 2100
3529 M89 V CP17 CP17 CP17 de L9CC L9CC CW 1-12-2006
3536.1 M89 V CP17 CP17 CP17 de L9CC L9CC CW 1-12-2006
3556.4 M89 V CP17 CP17 CP17 de L9CC L9CC CW 3-12-2006
3564 S10 444 626 48 18 USB 13-11-2006 2020 (AnEur)
3736 S30 Pip + voice message CW 3-12-2006 1821 (AB)
3755.8 S30 The pip CW 20-12-2006 Wed 0001 (BIG)
3756 S30 Pip + voice message CW/USB 5-12-2006 1501
3756 S30 Pip + voice message CW/USB 5-12-2006 1810
3756 S30 Pip + voice message CW/USB 6-12-2006 1817
3756 S30 OM, short msg in Russian CW/USB 6-12-2006
3756.0 S30 OM announcer with short message in Russian AM
5-12-2006 Tue 1506 (Red3)

3810	M10	444 571 74 19, 275 30 27, 049 05 31, 435 77 41 CW 15-11-2006 0535 (AnEur)
3810	M10	333 571 10 21, 275 79 32, 049 15 32, 435 38 27 CW 18-11-2006 0535 (AnEur)
3828.9	S32	Squeaky Wheel USB 3-12-2006 1817 (AB)
3840	E10	YHF2 // 2844 kHz AM 1-12-2006 1900 (MG)
3845	G06	308 965/124 AM 4-12-2006 2000 (MUK)
3845.0	G06	308-965/124=64556 AM 4-12-2006 Mon 2000 (HFD)
3926.0	M08	ID 24893 33453 40682 (Repeat of 0300z on 4027m) CW 5-12-2006 Tue 0400 (MS)
3926.0	M08	ID 28921 33455 40683 (Repeat of 0300z on 4027m) CW 12-12-2006 Tue 0400 (MS)
3957.0	S30	S30 with short OM voice message AM 6-12-2006 Wed 1817 (Red3)
4017.0	V02	(Too weak for copy) AM 5-12-2006 Tue 0300 (MS)
4017.0	V02	A 09311 98101 16922 (YL/SS) AM 12-12-2006
4027.0	M08	ID 24893 33453 40682 CW 5-12-2006 Tue 0300
4027.0	M08	ID 28921 33455 40683 CW 12-12-2006 Tue 0300
4028.0	V02	A 81571 95751 70681 (YL/SS) AM 15-12-2006 Fri
4028.0	V02	A 52191 29411 07742 (YL/SS. Repeat of 0400z on 4479m) AM 15-12-2006 Fri 0500 (MS)
4028.0	V02	(AM carrier up on time, no audio present by 0610z) AM 15-12-2006 Fri 0600 (MS)
4035.0	E06	496-378/259=08996 AM 29-12-2006 Fri 2200
4035.0	V02	(Too weak for copy) AM 1-12-2006 Fri 1200 (MS)
4035.0	V02	A 41161 62462 16272 (YL/SS. Repeat of 1100z on 3292m) AM 4-12-2006 Mon 1200 (MS)
4035.0	V02	A 41162 62463 16273 (YL/SS. Repeat of 1100z on 3360m) AM 6-12-2006 Wed 1200 (MS)
4035.0	V02	A 41163 01671 82481 (YL/SS. Repeat of 1100z on 3245m. Op chang AM 8-12-2006 Fri 1203 (MS)
4035.0	V02	A 17000 40672 87522 (YL/SS new voice. Note use of "0" in first AM 9-12-2006 Sat 1000 (MS)
4035.0	V02	A 47554 78338 61244 (YL/SS New voice. Repeat of 0300z on 4174m. AM 11-12-2006 Mon 0400 (MS)
4035.0	V02	A 23380 34553 68524 (YL/SS New voice. Repeat of 1100z on 3292m) AM 11-12-2006 Mon 1200
4035.0	V02	A 41165 71541 95111 (YL/SS) AM 15-12-2006 Fri
4035.0	V02	A 73442 54023 15213 (YL/SS. Repeat of 1100z on 3360m) AM 27-12-2006 Wed 1200 (MS)
4115.0	E10	Just caught end. Female voice "HNCZ" repeating. Subsequent telep AM 16-12-2006 Sat 0018 (BIG)
4174.0	V02	A 47554 78338 61244 (YL/SS New voice.) AM 11- 12-2006 Mon 0300 (MS)
4270	E10	PCD G23 WWBXK // 3150 kHz AM 1-12-2006 1930
4270	E10	PCD G19 QGAIT // 3150 kHz both clean signals AM 2-12-2006 1930 (MG)
4331	M22	4XZ. Israeli navy Tel Aviv CW 31-12-2006 0504

4331.0 M22 VVV DE 4XZ RW7L NR 016 CW 31-12-2006 Sun
4446.0 S10 ip AM 21-12-2006 Thu 2135 (HFD)
4455.0 S06 AM 14-12-2006 Thu 2130
4473.0 XPA msg AM 19-12-2006 Tue 2140 (HFD)
4479.0 V02 A 52191 29411 07742 (YL/SS) AM 15-12-2006 Fri
4505.0 M1B 419 CW 1-12-2006 Fri 2202 (HFD)
4505.0 M3 040/00 CW 4-12-2006 Mon 0700 (HFD)
4507.0 V02 A 17000 40672 87522 (YL/SS new voice. Repeat
of 1000z on 4035m) AM 9-12-2006 Sat 1100 (MS)
4515 E06 690 - 154/77 S7-8 QRM AM 10-12-2006 1930
4523.0 ? Newbie report! In German. Unsure of centre
frequency. AM 14-12-2006 Thu 0018 (BIG)
4625.0 S28 The Buzzer USB 23-12-2006 Sat 1000 (AS)
4729 E07 887-1 793/18 S+10db loud and clear AM AM 11-
12-2006 2140 (MUK)
4783 M10 273 09 39, 385 99 29 CW 2-10-2006 2100 (AnEur)
4783 M10 555 273 09 39, 385 99 29 CW 4-10-2006 2100
4783 M10 555 273 09 39, 385 99 29 CW 4-10-2006 2100
4792 E07 887-1 793/18 AM 4-12-2006 2140 (MUK)
4792.0 E07 887:1-793/18=94550 AM 4-12-2006 Mon 2140
4840.0 M3 041/00 CW 12-12-2006 Tue 0730 (HFD)
4929 M89 V B7TZ B7TZ B7TZ DE 8PNX 8PNX
282/8240/8090/12/30/0340/041/A/43/45 AR V
B7TZ B7TZ B7TZ DE 8PNX 8PNX CW 29-12-2006
4929 M89 V B7TZ B7TZ B7TZ DE 8PNX 8PNX
282/8240/8090/12/30/0340/041/A/43/45 AR V
B7TZ B7TZ B7TZ DE 8PNX 8PNX. Repeat of 1908
UTC CW 29-12-2006 1930 (AT)
5027 M10 ??? 587 95 33, 925 23 40 CW 14-11-2006 0510
5077 M10 999 066 73 30, 229 37 42 CW 13-11-2006 0450
5094 M10 777 004 55 35 CW 14-11-2006 0530 (AnEur)
5134.0 M08 Cuban cut numbers in prog- weak this morning AM
7-12-2006 Thu 1300 (Red)
5134.0 M08 (Too weak for copy) CW 15-12-2006 Fri 1300
5134.0 M08 ID 12463 75991 .4132 (Very weak, hard to copy)
CW 22-12-2006 Fri 1300 (MS)
5153.7 MX Cluster beacon "D" CW 3-12-2006 1816 (AB)
5153.8 MX Cluster beacon "P" CW 3-12-2006 0850 (AB)
5153.8 MX Cluster beacon "P" CW 3-12-2006 1816 (AB)
5154.0 MX Cluster beacon "C" CW 3-12-2006 1816 (AB)
5160.0 S06 210:0 AM 11-12-2006 Mon 2221 (HFD)
5181.0 M51 BT nr 55 e1 06 02:53:39 1989 BT CW 6-12-2006
Wed 0130 (MCO)
5190 G06 308 965/124 AM 4-12-2006 1900 (MUK)
5190.0 E06 496-378/259=08996 AM 29-12-2006 Fri 2100
5190.0 G06 308-965/124=64556 AM 4-12-2006 Mon 1900 (HFD)
5250.0 S06 374-518/8=5945# AM 12-12-2006 Tue 0700 (HFD)
5301 M10 222 566 80 23, 828 48 21 CW 13-11-2006 1820

5301 M10 888 566 80 23, 828 48 21 CW 14-11-2006 1820
5301.0 M10 111: 100-93/37=28793, 167-23/31=88888 CW 11-12-2006 Mon 1820 (HFD)
5301.0 M10 111: 755-47/27=41702, 029-29/41=14561 CW 11-12-2006 Mon 2200 (HFD)
5339.0 E10 kpa2 kpa2 USB 27-12-2006 Wed 2020 (BNL)
5417.0 V02 A 81571 95751 70681 (YL/SS. Repeat of 0100z on 4028m) AM 15-12-2006 Fri 0200 (MS)
5424.0 XPA msg AM 8-12-2006 Fri 2100 (HFD)
5435.0 E10 USB 17-12-2006 Sun 1610 (AS2)
5435.0 E10 Calling ART//3417kHz YL/EE 5L Msg Gr 109 = ZBTXB ORBMY HSVWF = USB 23-12-2006 Sat
5435.0 E10 Calling ART2 YL/EE No further traffic. USB 23-12-2006 Sat 2100 (NS)
5435.0 E10 poor signal USB 27-12-2006 Wed 2024 (BNL)
5465.9 MX channel marker "R" CW 27-12-2006 Wed 2026
5471 M10 111 426 78 17 CW 12-11-2006 1800 (AnEur)
5471 M10 111 426 78 17 CW 13-11-2006 1800 (AnEur)
5471 M10 999 089 65 27 CW 19-11-2006 1800 (AnEur)
5628 M89 V GM3Z GM3Z GM3Z DE PNW9 PNW9 CW 12-12-2006 1843
5636 M89 V GM3Z GM3Z GM3Z DE PNW9 PNW9 CW 13-12-2006 1720
5785.0 E06 690-154/77=08791 AM 11-12-2006 Mon 1830 (HFD)
5799.0 M08 Cuban cut numbers in prog, almost inaudible at times with alot o CW 7-12-2006 Thu 1400 (Red)
5800.0 M08 ID ----- 19443 29883 (Repeat of 0900z on 5947m. Late start at 1 MCW 3-12-2006 Sun 1000 (MS)
5800.0 M08 loud M8a MCW in prog MCW 5-12-2006 Tue 1033
5800.0 M08 ID 05381 48222 97322 MCW 7-12-2006 Thu 1000
5800.0 M08 (Should be repeat of 0500z on 5930m. Early start, in traffic, n MCW 9-12-2006 Sat 0600 (MS)
5800.0 M08 ID 78222 70951 02011 MCW 12-12-2006 Tue 1000
5800.0 M08 ID 82552 70952 02012 (Repeat of 0900z on 5947m) MCW 14-12-2006 Thu 1000 (MS)
5800.0 M08 ID 79032 10892 48502 (Repeat of 0500z on 5930m. Started at 0601 MCW 19-12-2006 Tue
5800.0 M08 ID 56832 14082 15332 (Repeat of 0500z on 5930m) MCW 30-12-2006 Sat 0600 (MS)
5800.0 M08 56832 14082 15332 AM 30-12-2006 Sat 0620 (JR)
5800.0 V02 A 97591 10763 78233 (YL/SS. Reversed freqs with M8a on 9240m at AM 31-12-2006 Sun 1000
5810.0 M01 197 CW 9-12-2006 Sat 1500 (HFD)
5860 M10 999 587 95 33, 925 23 40 CW 12-11-2006 1920
5860 M10 999 587 95 33, 925 23 40 CW 12-11-2006 1920
5860 M10 888 587 95 33, 925 23 40 CW 13-11-2006 1920
5883 M08 new sked? CW 31-12-2006 Sun 0500 (Jon-FL)
5883.0 M08 52776 77830 75091 (vy weak) AM 31-12-2006

5883.0 V02 (Very weak signal, no copy, believe the new voice
 was being used AM 9-12-2006 Sat 0500 (MS))
 5883.0 V02 (YL/SS. Late at 0503z already in progress) AM
 23-12-2006 Sat 0500 (MS)
 5896 E07 887-1 793/18 AM 4-12-2006 2120 (MUK)
 5896.0 E07 887:1-793/18=94550 AM 4-12-2006 Mon 2120
 5930.0 M08 ID 07683 36472 70303 (Repeat of 0600z on
 6786m) MCW 3-12-2006 Sun 0700 (MS)
 5930.0 M08 ID 70433 18343 95853 (Came up late at 0505z)
 MCW 5-12-2006 Tue 0505 (MS)
 5930.0 M08 (In progress, missed callups) MCW 9-12-2006 Sat
 5930.0 M08 ID 79032 10892 48502 (Began late at 0503z, then
 restarted with c MCW 19-12-2006 Tue 0500 (MS))
 5930.0 M08 ID ----- 84783 51081 (Repeat of 0600z on 6786m.
 Starts at 0707z MCW 19-12-2006 Tue 0700 (MS))
 5930.0 M08 ID 01542 75691 51082 MCW 21-12-2006 Thu 0700
 5930.0 M08 ID 06151 84151 09541 (Late 0505z) MCW 23-12-
 2006 Sat 0500 (MS)
 5930.0 M08 ID 01543 75692 51083 (Start at 0605z. Should be
 on 6786m) MCW 24-12-2006 Sun 0600 (MS)
 5930.0 M08 ID 01543 75692 51083 (Repeat of 0600z on
 5930m. The operator re MCW 24-12-2006 Sun
 5930.0 M08 5 Letter groups in morse code CW 28-12-2006 Thu
 5930.0 M08 ID ----- 31712 (Already in progress) MCW 28-
 12-2006 Thu 0700 (MS)
 5930.0 M08 ID 56832 14082 15332 MCW 30-12-2006 Sat 0500
 5945.0 M10 111: 442-78/25=14120, 460-###/23=#####... CW
 25-12-2006 Mon 1500 (HFD)
 5946.0 E11 312/00 AM 29-12-2006 Fri 1230 (Red3)
 5946.0 S17 65026, //9165 AM 3-12-2006 Sun 1250 (HFD)
 5946.0 S17 65028, //9165 AM 6-12-2006 Wed 1250 (HFD)
 5946.0 S17 55036, //9165 AM 9-12-2006 Sat 1250 (HFD)
 5946.0 S17 69029, //9165 AM 11-12-2006 Mon 1250 (HFD)
 5946.0 S17 59024, //9165 AM 14-12-2006 Thu 1250 (HFD)
 5946.0 S17 70026, //9165 AM 20-12-2006 Wed 1250 (HFD)
 5946.0 S17 57028, //9165 AM 24-12-2006 Sun 1250 (HFD)
 5946.0 S17 64024, //9165 AM 30-12-2006 Sat 1250 (HFD)
 5946.0 S17 60029, //9165 AM 31-12-2006 Sun 1250 (HFD)
 5947.0 M08 ID 95343 19443 29883 MCW 3-12-2006 Sun 0900
 5947.0 M08 ID 82552 70952 02012 MCW 14-12-2006 Thu 0900
 5947.0 M08 (AM carrier up on time, no audio present by 0908z)
 MCW 19-12-2006 Tue 0900 (MS)
 5947.0 M08 ID 15653 50282 21372 (Start at 0902z) MCW 21-
 12-2006 Thu 0900 (MS)
 5947.0 M08 ID 15653 50282 21372 (Should be on freq 5800m.
 Repeat of 0900z MCW 21-12-2006 Thu 1000 (MS))
 5947.0 M08 ID 34583 50283 21373 (Start on time at 0900z)
 MCW 24-12-2006 Sun 0900 (MS)

6379 M22 4XZ Israeli Navy CW 30-12-2006 0530 (JR)
 6379.0 M22 MJYQY BOPDG ZIQIZ = = NR 016 CW 30-12-2006
 Sat 0515 (JR)
 6758.0 M10 333: 972-87/35=32913, 115-~~###~~/26=~~#####~~ CW 3-
 12-2006 Sun 1610 (HFD)
 6764 M10 777 571 74 19, 275 30 27, 049 05 31, 435 77 41
 CW 13-11-2006 1630 (AnEur)
 6768.0 V02 A 05962 42743 73527 (YL/SS New voice. Repeat
 of 0300z on 6855m. AM 11-12-2006 Mon 0400 (MS)
 6786.0 M08 ID 05341 04202 18082 CW 1-12-2006 Fri 0900 (MS)
 6786.0 M08 ID 07683 36472 70303 MCW 3-12-2006 Sun 0600
 6786.0 M08 ID 23093 07512 42102 CW 6-12-2006 Wed 0900
 6786.0 M08 ID 83625 66406 78211 (Sending is rushed) CW 9-
 12-2006 Sat 0900 (MS)
 6786.0 M08 ID 82551 72542 96042 CW 13-12-2006 Wed 0900
 6786.0 M08 ID 69542 98063 03022 (Another false start) CW
 15-12-2006 Fri 1900 (MS)
 6786.0 M08 ID 53263 84782 06603 (Came up late at 0606z)
 MCW 17-12-2006 Sun 0600 (MS)
 6786.0 M08 (Too weak for copy) CW 18-12-2006 Mon 1900
 6786.0 M08 ID 01541 84783 51081 (Starts at 0607z) MCW 19-
 12-2006 Tue 0600 (MS)
 6786.0 M08 ID 29583 39682 34122 CW 27-12-2006 Wed 0900
 6786.0 V02 (AM carrier, but no audio by 0606z) AM 31-12-
 2006 Sun 0600 (MS)
 6800.0 S06 210:0 AM 11-12-2006 Mon 2115 (HFD)
 6854.0 M08 ID 79793 47695 44831 (Repeat of 2100z on
 6932m) CW 7-12-2006 Thu 2200 (MS)
 6854.0 M08 (QRM blocking brdcst.) CW 13-12-2006 Wed 2200
 6854.0 M08 ID 83272 26823 59263 (Repeat of 2100z on
 6932m) CW 14-12-2006 Thu 2200 (MS)
 6854.0 M08 ID 34081 00171 24782 CW 21-12-2006 Thu 2200
 6854.0 M08 ID 31192 05051 27903 CW 27-12-2006 Wed 2200
 6855 M08 Combi of voice, CW and PSK-31. Very curious
 PSK-31 27-12-2006 2100 (Jon-FL)
 6855.0 V02 AM 2-12-2006 Sat 0021 (FAN)
 6855.0 V02 A 15252 73912 70772 (YL/SS) AM 2-12-2006 Sat
 6855.0 V02 A 35181 48661 04491 (YL/SS. Repeat of 2000z
 on 7887m) AM 4-12-2006 Mon 2100 (MS)
 6855.0 V02 (Early start. Already in progress. Missed calls)
 AM 6-12-2006 Wed 2100 (MS)
 6855.0 V02 A 04451 98631 80421 (YL/SS. Repeat of 2000z
 on 7887m) AM 7-12-2006 Thu 2100 (MS)
 6855.0 V02 A 04453 98633 80423 (YL/SS, here using normal
 voice. Repeat of AM 9-12-2006 Sat 2100 (MS)
 6855.0 V02 Spanish woman AM 11-12-2006 Mon 0021 (TNH)
 6855.0 V02 A 05962 42743 73527 (YL/SS New voice.) AM 11-
 12-2006 Mon 0300 (MS)

6855.0 V02 A 89593 11003 89023 (YL/SS. Should be repeat
of 2000z on 7887m) AM 12-12-2006 Tue 2100 (MS)
6855.0 V02 A 82871 90011 72031 (YL/SS. Repeat of 2000z
on 7887m) AM 13-12-2006 Wed 2100 (MS)
6855.0 V02 A 82872 90012 72032 (YL/SS. Repeat of 2000z
on 7887m) AM 14-12-2006 Thu 2100 (MS)
6855.0 V02 A 31501 47471 14971 (YL/SS. Repeat of 2000z
on 7887m) AM 16-12-2006 Sat 2100 (MS)
6855.0 V02 A 82662 77543 82541 (YL/SS) AM 18-12-2006
6855.0 V02 A 31503 47473 14973 (YL/SS. Repeat of 2000z
on 7887m) AM 18-12-2006 Mon 2100 (MS)
6855.0 V02 A 14931 40811 08001 (YL/SS. Repeat of 2000z
on 7887m) AM 19-12-2006 Tue 2100 (MS)
6855.0 V02 A 24832 68342 84232 (YL/SS. Repeat of 1600z
on 7975m) AM 20-12-2006 Wed 1700 (MS)
6855.0 V02 A 14933 40813 08003 (YL/SS. Start at 2103z) AM
21-12-2006 Thu 2100 (MS)
6855.0 V02 A 69432 72142 56722 (YL/SS. Repeat of 2000z
on 6855m) AM 23-12-2006 Sat 2100 (MS)
6855.0 V02 A 81932 13122 36242 (YL/SS) AM 26-12-2006
6855.0 V02 A ----- 19682 51401 (YL/SS. Too weak for good
copy) AM 27-12-2006 Wed 1600 (MS)
6855.0 V02 (AM carrier up, but no audio by 2106z) AM 27-12-
2006 Wed 2100 (MS)
6855.0 V02 A 91841 54681 21091 (YL/SS. Repeat of 2000z
on 7887m) AM 31-12-2006 Sun 2100 (MS)
6860.0 S06 847-153/62=25024 AM 26-12-2006 Tue 1630
6866.0 M08 ID 57721 87852 61163 (Repeat of 1300z on
7519m. Moved from 7519 CW 4-12-2006 Mon
6866.0 M08 ID 60133 57961 77352 (Old morse format.) CW 11-
12-2006 Mon 1400 (MS)
6867.0 M08 A ...71 2.193 661.3 (Too weak for good copy) CW
21-12-2006 Thu 1600 (MS)
6867.0 V02 A ..202 .03.3 48.53 (YL/SS. Very weak signal
pretty much uncopi AM 12-12-2006 Tue 1600 (MS)
6867.0 V02 A 98131 38153 50443 AM 15-12-2006 Fri 1600
6892 E07 887-1 793/18 AM 4-12-2006 2100 (MUK)
6892.0 E07 887:1-794/18=94550 AM 4-12-2006 Mon 2100
6894 S10d 370 93 26 USB 1-10-2006 2050 (AnEur)
6932.0 M08 ID 79793 47695 44831 CW 7-12-2006 Thu 2100
6932.0 M08 ID 83272 26823 59263 CW 14-12-2006 Thu 2100
6959.0 E03 Weak signal, cloudy weather over QTH USB 30-
12-2006 Sat 2203 (EA4AFY)
7038.7 MX Cluster beacon "D" CW 3-12-2006 0850 (AB)
7038.8 MX Cluster beacon "P" CW 3-12-2006 0850 (AB)
7039 M89 V CP17 CP17 CP17 de L9CC L9CC CW 1-12-2006
7039 MX Cluster beacon "C" CW 30-12-2006 1440 (AB)
7039.2 MX Cluster beacon iFî CW 2-12-2006 1800

7043.7 M89 V CP17 CP17 CP17 de L9CC L9CC CW 3-12-2006
7047.9 M89 V CP17 CP17 CP17 de L9CC L9CC CW 1-12-2006
7049.9 M89 V CP17 CP17 CP17 de L9CC L9CC CW 1-12-2006
7050.5 M89 V CP17 CP17 CP17 de L9CC L9CC CW 4-12-2006
7054 M89 V CP17 CP17 CP17 de L9CC L9CC CW 1-12-2006
7057.6 M89 V CP17 CP17 CP17 de L9CC L9CC CW 6-12-2006
7058.5 M89 V CP17 CP17 CP17 de L9CC L9CC CW 7-12-2006
7061 M89 V CP17 CP17 CP17 de L9CC L9CC CW 8-12-2006
7064.5 M89 V CP17 CP17 CP17 de L9CC L9CC CW 11-12-2006
7067.3 M89 V CP17 CP17 CP17 de L9CC L9CC CW 11-12-2006
7317 E11 284/00 AM 1-12-2006 0915 (MUK)
7317 E11 284/00 AM 6-12-2006 0915 (MUK)
7317 E11 284/00 DRM QRM Friday AM 8-12-2006 0915
7439.0 E11 E11 YL 312/00 AM 5-12-2006 Tue 1230 (Red3)
7481.0 M08 ID ----- 41572 00783 (Moved to correct freq about
2205z.) CW 1-12-2006 Fri 2205 (MS)
7481.0 M08 ID 41573 37943 38343 (Repeat of 2100z on
7974m) CW 2-12-2006 Sat 2200 (MS)
7481.0 M08 ID 86093 47692 90591 (Repeat of 2100z on
7974m) CW 4-12-2006 Mon 2200 (MS)
7481.0 M08 ID 79791 47693 90592 CW 5-12-2006 Tue 2200
7481.0 M08 ID 93811 47696 44832 (Note: used same first
callup as M8a on 75 CW 8-12-2006 Fri 2200 (MS)
7481.0 M08 ID 90331 07532 31202 (Normal sending) CW 9-12-
2006 Sat 2200 (MS)
7481.0 M08 ID 74284 17654 35012 (New morse) CW 10-12-
2006 Sun 2200 (MS)
7481.0 M08 ID 93812 90333 44933 (Old morse format.) CW 11-
12-2006 Mon 2200 (MS)
7481.0 M08 ID 93813 26821 59261 CW 12-12-2006 Tue 2200
7481.0 M08 ID 83273 40391 41751 CW 15-12-2006 Fri 2200
7481.0 M08 ID 78432 20422 44802 (This sked should be on
7519m now) CW 18-12-2006 Mon 2200 (MS)
7481.0 M08 ID 46852 83962 41753 CW 19-12-2006 Tue 2200
7481.0 M08 ID 34082 00172 24783 CW 22-12-2006 Fri 2200
7481.0 M08 ID 00173 33923 98633 (Repeat of 2100z on
7974m) CW 23-12-2006 Sat 2200 (MS)
7481.0 M08 ID 31191 51613 67902 (Repeat of 2100z on
7974m) CW 26-12-2006 Tue 2200 (MS)
7481.0 M08 ID 71231 05053 92642 CW 29-12-2006 Fri 2200
7519.0 M08 ID ----- 18573 42623 (Already in progress) CW 1-
12-2006 Fri 2200 (MS)
7519.0 M08 ID 57721 87852 61163 CW 4-12-2006 Mon 1300
7519.0 M08 ID 57721 87852 61163 (Up on last hours freq.
Changes at 1402z) CW 4-12-2006 Mon 1400 (MS)
7519.0 M08 ID 41321 21021 14341 CW 4-12-2006 Mon 2200
7519.0 M08 ID 93811 70921 62712 CW 8-12-2006 Fri 2200 (MS)
7519.0 M08 ID 65502 31525 84038 (New morse format.) CW

11-12-2006 Mon 1300 (MS)
 7519.0 M08 ID 71363 70922 62713 (Old morse format.) CW 11-12-2006 Mon 2200 (MS)
 7519.0 M08 (Mixed with M8a brdcst on 6854m. Garbling makes uncopiable.) CW 13-12-2006 Wed 2200 (MS)
 7519.0 M08 ID 78431 20421 44801 CW 15-12-2006 Fri 2200
 7519.0 M08 ID 46851 83961 41752 (This sked should be on 7481m now) CW 18-12-2006 Mon 2200 (MS)
 7519.0 M08 ID 08193 23323 60093 CW 22-12-2006 Fri 2200
 7519.0 M08 ID 92243 21823 23563 CW 27-12-2006 Wed 2200
 7519.0 M08 ID 50192 37092 65002 CW 29-12-2006 Fri 2200
 7526.0 M08 ID 41322 21022 14342 CW 5-12-2006 Tue 2200
 7526.0 M08 (Heavy QRM blocking freq. Uncopiable.) CW 12-12-2006 Tue 2200 (MS)
 7526.0 M08 ID 78433 20423 44803 CW 19-12-2006 Tue 2200
 7554.0 M08 ID 93101 (Fades away to uncopiable) CW 1-12-2006 Fri 2000 (MS)
 7554.0 M08 (In progress, missed the callups) CW 4-12-2006 Mon 2000 (MS)
 7554.0 M08 (Too weak for copy) CW 5-12-2006 Tue 2000
 7554.0 M08 ID 85161 69541 98163 (Very weak, not 100% positive on calls) CW 14-12-2006 Thu 2000 (MS)
 7554.0 M08 ID 69543 92981 85162 CW 18-12-2006 Mon 2000
 7554.0 M08 ID 00752 92982 41181 CW 20-12-2006 Wed 2000
 7554.0 M08 (Too weak for copy) CW 29-12-2006 Fri 2000
 7555.0 V02 A 07893 11623 92003 (YL/SS. Should be repeat of 0700z on 8136m) AM 1-12-2006 Fri 0800 (MS)
 7555.0 V02 A 72251 24124 78675 (YL/SS. Repeat of 0700z on 8136m) AM 13-12-2006 Wed 0800 (MS)
 7555.0 V02 A 73683 42262 38642 (YL/SS. Repeat of 0700z on 8136m) AM 27-12-2006 Wed 0800 (MS)
 7555.0 V02 A 46602 12081 50871 (YL/SS. Repeat of 0700z on 8136m) AM 29-12-2006 Fri 0800 (MS)
 7580.0 V02 A 19712 24123 78674 (YL/SS) AM 12-12-2006
 7580.0 V02 A 83361 29323 64803 (YL/SS. Repeat of 0700z on 8136m. Starts a AM 19-12-2006 Tue 0800 (MS)
 7580.0 V02 A 83363 80322 25692 (YL/SS. Repeat of 0700z on 8186m) AM 21-12-2006 Thu 0800 (MS)
 7595 M08 Combi of voice, CW and PSK-31. Very curious PSK-31 28-12-2006 1600 (Jon-FL)
 7605 S17 999 752 83 27, 786 17 34 USB 13-11-2006 1740
 7680.0 M08 ID 87592 74743 69303 CW 4-12-2006 Mon 1900
 7680.0 M08 ID 56401 74745 69305 CW 8-12-2006 Fri 1900 (MS)
 7680.0 M08 ID 56402 74746 69306 (Old morse format.) CW 11-12-2006 Mon 1900 (MS)
 7680.0 M08 (Too weak for copy) CW 15-12-2006 Fri 1900
 7680.0 M08 ID 54493 83621 31381 (Another M8a is mixed here. Hard to separa CW 20-12-2006 Wed 1900

7681.0 V02 A 22302 47662 83932 (YL/SS. Repeat of 0700z
on 8097m) AM 3-12-2006 Sun 0800 (MS)
7681.0 V02 A 19711 24122 78673 (YL/SS. Old voice) AM 10-
12-2006 Sun 0800 (MS)
7726.0 M08 ID 05341 04202 18082 (Repeat of 0900z on
6786m) CW 1-12-2006 Fri 1000 (MS)
7726.0 M08 ID 23093 07512 42102 (Repeat of 0900z on
6786m) CW 6-12-2006 Wed 1000 (MS)
7726.0 M08 ID 05382 07513 42103 CW 8-12-2006 Fri 1000 (MS)
7726.0 M08 ID 83625 66406 78211 (Sending is rushed. Repeat
of 0900z on 678 CW 9-12-2006 Sat 1000 (MS)
7726.0 M08 (Up late with no calls at 1006z -- not sure if new
morse format, CW 11-12-2006 Mon 1000 (MS)
7726.0 M08 GNWWA INWUN MRTUN (Wed) CW 13-12-2006
Wed 1000 (JPL)
7726.0 M08 ID 15652 63451 43671 CW 20-12-2006 Wed 1000
7726.0 V02 A 34581 63452 43672 (YL/SS) AM 22-12-2006 Fri
7745 S10d 370 93 26 USB 1-10-2006 2050 (AnEur)
7887 M08 Combi of voice, CW and PSK-31. Very curious
PSK-31 27-12-2006 2000 (Jon-FL)
7887.0 M08 (Early start, in traffic, no callups copied.) CW 9-12-
2006 Sat 0600 (MS)
7887.0 M08 ID 79032 98572 42872 CW 19-12-2006 Tue 0600
7887.0 M08 ID 56832 27142 72422 (Repeat of 0500z on
9063m) CW 30-12-2006 Sat 0600 (MS)
7887.0 V02 A 15251 73911 70771 (YL/SS) AM 1-12-2006 Fri
7887.0 V02 A 35181 48661 04491 (YL/SS. Weak mixing of
M8a up now on 8009m, AM 4-12-2006 Mon 2000
7887.0 V02 A 35182 48662 04492 (YL/SS) AM 5-12-2006 Tue
7887.0 V02 A 04451 98631 80421 (YL/SS) AM 7-12-2006 Thu
7887.0 V02 A 04452 98632 80422 (YL/SS) AM 8-12-2006 Fri
7887.0 V02 A 04453 98633 80423 (YL/SS, here using normal
voice) AM 9-12-2006 Sat 2000 (MS)
7887.0 V02 Spanish Numbers station, NOT mechanical, but a
REAL female. JH USB 10-12-2006 Sun 1505
7887.0 V02 A 89592 11002 89022 (YL/SS Old voice.) AM 11-
12-2006 Mon 2000 (MS)
7887.0 V02 (AM carrier up on time, but no audio and dropped
at 2010z) AM 12-12-2006 Tue 2000 (MS)
7887.0 V02 A 82871 90011 72031 (YL/SS) AM 13-12-2006
7887.0 V02 A 82872 90012 72032 (YL/SS) AM 14-12-2006
7887.0 V02 (AM carrier up and then went down at 2008z, no
audio present) AM 15-12-2006 Fri 2000 (MS)
7887.0 V02 A 31501 47471 14971 (YL/SS) AM 16-12-2006 Sat
7887.0 V02 A 31503 47473 14973 (YL/SS) AM 18-12-2006
7887.0 V02 A 14931 40811 08001 (YL/SS) AM 19-12-2006
7887.0 V02 A 14932 40812 08002 (YL/SS) AM 20-12-2006
7887.0 V02 A 69432 72142 56722 (YL/SS) AM 23-12-2006 Sat

7887.0 V02 A 81933 13123 36243 (YL/SS) AM 27-12-2006
7887.0 V02 A 76451 59091 01871 (YL/SS) AM 28-12-2006
7887.0 V02 A 76452 59092 01872 (YL/SS) AM 29-12-2006 Fri
7887.0 V02 A 91841 54681 21091 (YL/SS) AM 31-12-2006
7918.0 E10 yhf-2 USB 24-12-2006 Sun 1400 (AS)
7974.0 M08 ID 86092 41572 00783 (Should be on 7481m this
hour) CW 1-12-2006 Fri 2200 (MS)
7974.0 M08 ID 41573 37943 38343 CW 2-12-2006 Sat 2100
7974.0 M08 ID 86093 47692 90591 CW 4-12-2006 Mon 2100
7974.0 M08 ID 00173 33923 98633 CW 23-12-2006 Sat 2100
7974.0 M08 ID 31191 51613 67902 CW 26-12-2006 Tue 2100
7975.0 V02 A 11462 77962 15272 (YL/SS) AM 2-12-2006 Sat
7975.0 V02 A ----- 77963 15273 (YL/SS) AM 3-12-2006 Sun
7975.0 V02 A 82571 91521 98361 (YL/SS) AM 4-12-2006 Mon
7975.0 V02 A 82572 91522 98362 (YL/SS) AM 5-12-2006 Tue
7975.0 V02 A 61641 23401 43791 (YL/SS) AM 7-12-2006 Thu
7975.0 V02 A 61642 23402 43792 (YL/SS) AM 8-12-2006 Fri
7975.0 V02 A 82922 38802 01670 (YL/SS. New voice) AM
10-12-2006 Sun 1600 (MS)
7975.0 V02 (AM carrier up on time, but then turned down at
1602z with no me AM 11-12-2006 Mon 1600 (MS)
7975.0 V02 A 98603 67543 18293 (YL/SS) AM 12-12-2006
7975.0 V02 (Already in progress, missed calls) AM 15-12-
2006 Fri 1600 (MS)
7975.0 V02 A 69013 30943 29763 AM 15-12-2006 Fri 1600
7975.0 V02 A 32791 67891 78411 (YL/SS) AM 16-12-2006 Sat
7975.0 V02 A 32792 67892 78412 (YL/SS) AM 17-12-2006
7975.0 V02 A 32793 67893 78413 (YL/SS) AM 18-12-2006
7975.0 V02 A 24831 68341 84231 (YL/SS) AM 19-12-2006
7975.0 V02 A 24832 68342 84232 (YL/SS) AM 20-12-2006
7975.0 V02 A 24833 68343 84233 (YL/SS) AM 21-12-2006
7975.0 V02 A 20262 55962 13522 (YL/SS) AM 23-12-2006 Sat
7975.0 V02 A ----- 13012 ----- (YL/SS. Already in progress)
AM 26-12-2006 Tue 1600 (MS)
7975.0 V02 A 62513 13013 49833 (YL/SS) AM 27-12-2006
7975.0 V02 (1601z PSK-31. About 1611z high-speed morse
long number groups. AM 28-12-2006 Thu 1600
7975.0 V02 A 41751 73961 27681 (YL/SS) AM 31-12-2006
8009.0 M08 (Already in progress, missed callups) CW 1-12-
2006 Fri 2000 (MS)
8009.0 M08 ID 87592 74743 69303 (Repeat of 1900z on
7680m) CW 4-12-2006 Mon 2000 (MS)
8009.0 M08 ID 41321 21021 14341 (Repeat of 2200z on
7519m) CW 4-12-2006 Mon 2300 (MS)
8009.0 M08 ID 41323 21023 14343 CW 6-12-2006 Wed 2300
8009.0 M08 ID 71361 50901 62711 CW 7-12-2006 Thu 2200
8009.0 M08 ID 56402 74746 69306 (Old morse format. Repeat
of 1900z on 7680 CW 11-12-2006 Mon 2000 (MS)

8009.0 M08 ID 71363 70922 62713 (Old morse format. Repeat
 of 2200z on 7519 CW 11-12-2006 Mon 2300 (MS)
 8009.0 M08 ID 64932 72692 02612 CW 13-12-2006 Wed 2300
 8009.0 M08 ID 64933 72693 02613 CW 14-12-2006 Thu 2200
 8009.0 M08 ID 78432 20422 44802 (Repeat of 2200z on
 7481m, which should hav CW 18-12-2006 Mon
 8009.0 M08 (Late start, already in progress) CW 20-12-2006
 Wed 2000 (MS)
 8009.0 M08 ID 08192 23322 60092 CW 21-12-2006 Thu 2200
 8009.0 M08 ID 92243 21823 23563 (Repeat of 2200z on
 7519m) CW 27-12-2006 Wed 2300 (MS)
 8010.0 V02 A 11462 77962 15272 (YL/SS. Repeat of 1600z
 on 7975m) AM 2-12-2006 Sat 1700 (MS)
 8010.0 V02 A 82571 91521 98361 (YL/SS. Repeat of 1600z
 on 7975m) AM 4-12-2006 Mon 1700 (MS)
 8010.0 V02 A 82572 91522 98362 (YL/SS. Repeat of 1600z
 on 7975m) AM 5-12-2006 Tue 1700 (MS)
 8010.0 V02 A 61641 23401 43791 (YL/SS. Repeat of 1600z
 on 7975m) AM 7-12-2006 Thu 1700 (MS)
 8010.0 V02 A 61642 23402 43792 (YL/SS. Repeat of 1600z
 on 7975m) AM 8-12-2006 Fri 1700 (MS)
 8010.0 V02 A 82922 38802 01670 (YL/SS. New voice.
 Repeat of 1600z on 7975 AM 10-12-2006 Sun
 8010.0 V02 A 98602 67542 18292 (YL/SS Old voice.) AM 11-
 12-2006 Mon 1700 (MS)
 8010.0 V02 A 98603 67543 18293 (YL/SS. Repeat of 1600z
 on 7975m) AM 12-12-2006 Tue 1700 (MS)
 8010.0 V02 (YL/SS. Too weak for copy) AM 15-12-2006 Fri
 8010.0 V02 A 32791 67891 78411 (YL/SS. Repeat of 1600z
 on 7975m) AM 16-12-2006 Sat 1700 (MS)
 8010.0 V02 A 32792 67892 78412 (YL/SS. Repeat of 1600z
 on 7975m) AM 17-12-2006 Sun 1700 (MS)
 8010.0 V02 A 32793 67893 78413 (YL/SS. Repeat of 1600z
 on 7975m) AM 18-12-2006 Mon 1700 (MS)
 8010.0 V02 A 24831 68341 84231 (YL/SS. Repeat of 1600z
 on 7975m) AM 19-12-2006 Tue 1700 (MS)
 8010.0 V02 A 24833 68343 84233 (YL/SS. Repeat of 1600z
 on 7975m) AM 21-12-2006 Thu 1700 (MS)
 8010.0 V02 AM 21-12-2006 Thu 1700
 8010.0 V02 A 20262 55962 13522 (YL/SS. Repeat of 1600z
 on 7975m. Very wea AM 23-12-2006 Sat 1700
 8010.0 V02 A 62513 13013 49833 (YL/SS. Repeat of 1600z
 on 7975m) AM 27-12-2006 Wed 1700 (MS)
 8010.0 V02 A 41751 73961 27681 (YL/SS. Repeat of 1600z
 on 7975m) AM 31-12-2006 Sun 1700 (MS)
 8088.0 M3 508/00 CW 20-12-2006 Wed 0730 (HFD)
 8096.0 V02 WDGUN UGGAN MATWN MCW 26-12-2006 Tue
 1800 (CAM)

8097	M08	5FGs msg CW 23-12-2006 1803 (N2UHC)
8097.0	M08	ID 73971 08601 27471 MCW 1-12-2006 Fri 1800
8097.0	M08	ID 73971 08601 27471 (Repeat of 1800z on 8097m) MCW 1-12-2006 Fri 1900 (MS)
8097.0	M08	ID 81981 58971 55191 MCW 4-12-2006 Mon 1800
8097.0	M08	ID 81981 58971 55191 (Repeat of 1800z on 8097m) MCW 4-12-2006 Mon 1900 (MS)
8097.0	M08	ID 81982 58972 55192 MCW 5-12-2006 Tue 1800
8097.0	M08	ID 81982 58972 55192 (Repeat of 1800z on 8097m) MCW 5-12-2006 Tue 1900 (MS)
8097.0	M08	GAMGN WGMIN WWAMN (Tue) CW 5-12-2006 Tue 1900 (JPL)
8097.0	M08	ID 76691 08471 16951 MCW 7-12-2006 Thu 1800
8097.0	M08	ID 76692 08472 16952 MCW 8-12-2006 Fri 1800
8097.0	M08	ID 76692 08472 16952 (Repeat of 1800z on 8097m) MCW 8-12-2006 Fri 1900 (MS)
8097.0	M08	ID 76693 08473 16973 (Normal sending) MCW 9- 12-2006 Sat 1800 (MS)
8097.0	M08	ID 76693 08473 16973 (Normal sending. Repeat of 1800z on 8097m) MCW 9-12-2006 Sat 1900 (MS)
8097.0	M08	ID 39172 66233 10722 (New morse) MCW 10-12- 2006 Sun 1800 (MS)
8097.0	M08	ID 19512 14652 58232 (Old morse format.) MCW 11-12-2006 Mon 1800 (MS)
8097.0	M08	ID 19512 14652 58232 (Old morse format. Repeat of 1800z on 8097 MCW 11-12-2006 Mon 1900
8097.0	M08	ID 19513 14653 58233 MCW 12-12-2006 Tue 1800
8097.0	M08	ID 19513 14653 58233 (Repeat of 1800z on 8097m) MCW 12-12-2006 Tue 1900 (MS)
8097.0	M08	ID 20593 90253 03623 (False start) MCW 15-12- 2006 Fri 1800 (MS)
8097.0	M08	ID 20593 90253 03623 (False start. Repeat of 1800z on 8097m) MCW 15-12-2006 Fri 1900 (MS)
8097.0	M08	ID 67711 45411 84571 MCW 16-12-2006 Sat 1800
8097.0	M08	ID 67711 45411 84571 (Repeat of 1800z on 8097m) MCW 16-12-2006 Sat 1900 (MS)
8097.0	M08	ID 67713 45413 84573 MCW 18-12-2006 Mon 1800
8097.0	M08	ID 67713 45413 84573 (Repeat of 1800z on 8097m) MCW 18-12-2006 Mon 1900 (MS)
8097.0	M08	ID 93621 21791 51321 MCW 19-12-2006 Tue 1800
8097.0	M08	ID 93621 21791 51321 (Repeat of 1800z on 8097m) MCW 19-12-2006 Tue 1900 (MS)
8097.0	M08	ID 93622 21792 51322 MCW 20-12-2006 Wed
8097.0	M08	ID 93622 21792 51322 (Repeat of 1800z on 8097m) MCW 20-12-2006 Wed 1900 (MS)
8097.0	M08	(Carrier present, but no audio by 1805z) MCW 21- 12-2006 Thu 1800 (MS)
8097.0	M08	ID 25251 86091 39451 MCW 22-12-2006 Fri 1800

8097.0 M08 ID 25252 86092 39452 (Start on time at 1800z)
 MCW 23-12-2006 Sat 1800 (MS)
 8097.0 M08 ID 25252 86092 39452 (Start on time at 1900z.
 Repeat of 1800z o MCW 23-12-2006 Sat 1900
 8097.0 M08 ID 53842 48812 91052 MCW 26-12-2006 Tue 1800
 8097.0 M08 ID 53843 48813 91053 MCW 27-12-2006 Wed
 8097.0 M08 ID 53843 48813 91053 (Repeat of 1800z on
 8097m) MCW 27-12-2006 Wed 1900 (MS)
 8097.0 M08 ID 23211 45751 33631 MCW 28-12-2006 Thu 1800
 8097.0 M08 ID 23211 45751 33631 (Repeat of 1800z on
 8097m) MCW 28-12-2006 Thu 1900 (MS)
 8097.0 M08 ID 99681 36581 66461 MCW 31-12-2006 Sun 1800
 8097.0 M08 ID 99681 36581 66461 (Repeat of 1800z on
 8097m) MCW 31-12-2006 Sun 1900 (MS)
 8097.0 V02 A 22302 47662 83932 (YL/SS) AM 3-12-2006 Sun
 8097.0 V02 A 13053 05612 16842 (YL/SS) AM 24-12-2006
 8135.0 M08 ID 04053 18573 42623 (Repeat of 2200z on
 7519m) CW 1-12-2006 Fri 2300 (MS)
 8135.0 M08 ID 41322 21022 14342 (Repeat of 2200z on
 7526m) CW 5-12-2006 Tue 2300 (MS)
 8135.0 M08 ID 71361 50901 62711 (Repeat of 2200z on
 8009m. Very weak signa CW 7-12-2006 Thu 2300
 8135.0 M08 ID 93811 70921 62712 (Repeat of 2200z on
 7519m) CW 8-12-2006 Fri 2300 (MS)
 8135.0 M08 (Early start for sked. Missed calls) CW 12-12-
 2006 Tue 2300 (MS)
 8135.0 M08 ID 64933 72693 02613 (Repeat of 2200z on
 8009m) CW 14-12-2006 Thu 2300 (MS)
 8135.0 M08 ID 08192 23322 60092 (Repeat of 2200z on 8009)
 CW 21-12-2006 Thu 2300 (MS)
 8135.0 M08 ID 08193 23323 60093 (Repeat of 2200z on
 7519m) CW 22-12-2006 Fri 2300 (MS)
 8136.0 M08 ID 63507 04372 43047 (Sending is rushed) CW 9-
 12-2006 Sat 1100 (MS)
 8136.0 M08 ID 78433 20423 44803 (Repeat of 2200z on
 7526m) CW 19-12-2006 Tue 2300 (MS)
 8136.0 V02 (Early start, missed callups) AM 1-12-2006 Fri
 8136.0 V02 A 52772 78442 40232 (YL/SS) AM 3-12-2006 Sun
 8136.0 V02 A 72251 24124 78675 (YL/SS) AM 13-12-2006
 8136.0 V02 A ----- 29323 64803 (YL/SS. Starts at 0707z) AM
 19-12-2006 Tue 0700 (MS)
 8136.0 V02 A 83362 80321 25691 (YL/SS) AM 20-12-2006
 8136.0 V02 A 73683 42262 38642 (YL/SS) AM 27-12-2006
 8136.0 V02 A 46602 12081 50871 (YL/SS) AM 29-12-2006 Fri
 8150.0 V02 AM 30-12-2006 Sat 0737 (LPO)
 8186.0 V02 In Progress//S800M//Brooklyn USB 21-12-2006 Thu
 8186.0 V02 A 83363 80322 25692 (YL/SS) AM 21-12-2006
 8186.0 V02 A ----- 42263 ----- (YL/SS. Already in progress)

AM 28-12-2006 Thu 0700 (MS)

8186.0	V02	A 46603 12082 50872 (YL/SS) AM 30-12-2006 Sat
8190	S17	313 42 05, 64029 USB 29-9-2006 1250 (AnEur)
8190	S17	313 42 05, 56027 USB 2-10-2006 1250 (AnEur)
8190	S17	555 313 42 05, 61026 USB 3-10-2006 1250
8190	S17	555 313 42 05, 61026 USB 3-10-2006 1250
8190	S17	555 313 42 05, 59031 USB 5-10-2006 1250
8190	S17	555 313 42 05, 59031 USB 5-10-2006 1250
8190	S17	555 313 42 05, 72-32 USB 8-10-2006 1250
8190	S17	555 313 42 05, 72-32 USB 8-10-2006 1250
8430.0	M08	ID 48582 51274 04042 MCW 13-12-2006 Wed
8430.0	M08	ID 31823 94892 65002 MCW 27-12-2006 Wed
8464.0	E03	USB 3-12-2006 Sun 0020 (SF)
8464.0	E03	STRONG SIGNAL USB 17-12-2006 Sun 1600
8494.8	MX	Cluster beacon "P" CW 3-12-2006 0850 (AB)
8630.0	M08	ID 07073 41272 50592 MCW 6-12-2006 Wed 0900
8630.0	M08	ID 48582 51274 04042 (Repeat of 0800z on 8430m) MCW 13-12-2006 Wed 0900 (MS)
8630.0	M08	ID 31823 94892 65002 (Repeat of 0800z on 8430m) MCW 27-12-2006 Wed 0900 (MS)
8800	E11	232/00 AM 1-12-2006 0845 (MUK)
8800	E11b	234/34 AM 8-12-2006 0845 (MUK)
9040.0	V02	A 07893 71503 94443 (YL/SS) AM 1-12-2006 Fri
9040.0	V02	A 22302 94332 83752 (YL/SS) AM 3-12-2006 Sun
9040.0	V02	A 23462 00912 40822 (YL/SS) AM 6-12-2006 Wed
9040.0	V02	AM 6-12-2006 Wed 0902 (LPO)
9040.0	V02	A 07113 08247 38335 (YL/SS new voice) AM 9- 12-2006 Sat 0900 (MS)
9040.0	V02	A 72251 53045 08324 (YL/SS) AM 13-12-2006
9040.0	V02	ID 82552 70952 02012 (YL/SS) AM 14-12-2006
9040.0	V02	AM 18-12-2006 Mon 0009 (FAN)
9040.0	V02	A 83361 03193 94553 (YL/SS. Starts at 0902z) AM 19-12-2006 Tue 0900 (MS)
9040.0	V02	(AM carrier present, but no audio by 0610z) AM 21-12-2006 Thu 0900 (MS)
9040.0	V02	A 83363 09032 39142 (YL/SS. Should be on freq 9240m. Repeat of AM 21-12-2006 Thu 1000 (MS)
9040.0	V02	A 13053 18832 26822 (YL/SS) AM 24-12-2006
9040.0	V02	A 73683 63642 76382 (YL/SS) AM 27-12-2006
9062.0	M08	(Late at 0503z already in progress) CW 23-12- 2006 Sat 0500 (MS)
9063.0	M08	ID ----- 92113 06673 (M8a on 5930m was mixed with this sked and CW 5-12-2006 Tue 0500 (MS)
9063.0	M08	ID 56832 27142 72422 CW 30-12-2006 Sat 0500
9130.0	E10	EZI USB 12-12-2006 Tue 0005 (CM)
9152.0	M08	ID 63507 04372 43047 (Sending is rushed. Repeat of 1100z on 813 CW 9-12-2006 Sat 1200 (MS)
9153.0	V02	(YL/SS. Too weak for copy) AM 15-12-2006 Fri

9153.0 V02 A 77893 12712 08662 (YL/SS) AM 22-12-2006 Fri
 9165.0 S17 65026, //5946 AM 3-12-2006 Sun 1250 (HFD)
 9165.0 S17 65028, //5946 AM 6-12-2006 Wed 1250 (HFD)
 9165.0 S17 55036, //5946 AM 9-12-2006 Sat 1250 (HFD)
 9165.0 S17 69029, //5946 AM 11-12-2006 Mon 1250 (HFD)
 9165.0 S17 59024, //5946 AM 14-12-2006 Thu 1250 (HFD)
 9165.0 S17 70026, //5946 AM 20-12-2006 Wed 1250 (HFD)
 9165.0 S17 57028, //5946 AM 24-12-2006 Sun 1250 (HFD)
 9165.0 S17 64024, //5946 AM 30-12-2006 Sat 1250 (HFD)
 9165.0 S17 60029, //5946 AM 31-12-2006 Sun 1250 (HFD)
 9240.0 M08 ID 92271 47113 37793 (Reversed freqs with V2a
 on 5800m at this t MCW 31-12-2006 Sun 1000
 9240.0 V02 A 07893 71503 94443 (YL/SS. Repeat of 0900z
 on 9040m) AM 1-12-2006 Fri 1000 (MS)
 9240.0 V02 A 22302 94332 83752 (YL/SS. Repeat of 0900z
 on 9040m. At 1004z AM 3-12-2006 Sun 1000 (MS)
 9240.0 V02 V2a in prog/excellent sig AM 5-12-2006 Tue 1033
 9240.0 V02 AM 6-12-2006 Wed 0010 (LPO)
 9240.0 V02 A 23462 00912 40822 (YL/SS. Repeat of 0900z
 on 9040m) AM 6-12-2006 Wed 1000 (MS)
 9240.0 V02 A 49901 00913 40823 (YL/SS) AM 7-12-2006 Thu
 9240.0 V02 A 49902 53041 27181 (YL/SS) AM 8-12-2006 Fri
 9240.0 V02 A 07113 08247 38335 (YL/SS new voice. Repeat
 of 0900z on 9040m) AM 9-12-2006 Sat 1000 (MS)
 9240.0 V02 (Up late with no calls at 1008z -- YL/SS New
 voice.) AM 11-12-2006 Mon 1000 (MS)
 9240.0 V02 A 19712 53044 08323 (YL/SS) AM 12-12-2006
 9240.0 V02 A72251 53045 08324 (Wed) AM 13-12-2006 Wed
 9240.0 V02 ID 82552 70952 02012 (YL/SS. Repeat of 0900z
 on 9040m) AM 14-12-2006 Thu 1000 (MS)
 9240.0 V02 A 83362 09031 39141 (YL/SS) AM 20-12-2006
 9240.0 V02 A 73683 63642 76382 (YL/SS. Repeat of 0900z
 on 9040m) AM 27-12-2006 Wed 1000 (MS)
 9260.0 S06 493 AM 6-12-2006 Wed 1400 (HFD)
 9323.0 M08 ID 27118 51578 77231 (Sending is rushed) CW 9-
 12-2006 Sat 1000 (MS)
 9323.0 M08 ID 35291 75101 77512 CW 12-12-2006 Tue 1000
 9450 E25 music intro, 830 6 AM 2-12-2006 1215 (MG)
 9450 E25 780 msg same as 29/11 but 2nd grp 2001 and in
 7th grp last number "troo" AM 3-12-2006 1240
 9450 E25 780 msg same as 29/11 but 2nd grp 2001 and in
 7th grp last number "troo" AM 3-12-2006 1240
 9450 E25 780 calls 10 group message. AM 3-12-2006 1244
 9450 E25 test tone, 780 9509 2001 0311 3516 3405 5834
 2573 7621 1173 0311 AM 4-12-2006 1240 (MG)
 9450 E25 780 rptd, 10 gr msg. 9509 2001 0311 3516 3405
 5834 2573 7621 1173 0311 AM 4-12-2006 1244
 9450 E25 Music intro, 835 837 7 4010/4001 2120/1220 etc

AM 6-12-2006 1213 (MG)
 9450 E25 780 calls S9 good Friday AM 8-12-2006 1243
 9450 E25 780 9919 3041 3340 1435 0174 4693 2918 3261
 6456 8065 1745 8742 3774 3340 AM 9-12-2006
 9450.0 E25 1000Hz tone, 785 21 repeated 29 times.ended with
 mic taps., carr AM 16-12-2006 Sat 0012 (Mr.Dxer)
 9450.0 E25 test tone, OM with 785--24--25 repeated several
 times, ended wit AM 24-12-2006 Sun 0012
 9450.0 E25 AM 26-12-2006 Tue 1230 (AS)
 9610 S11a 213/33 AM 6-12-2006 0900 (MUK)
 10126. V02 A 90952 19272 85222 (YL/SS) AM 1-12-2006 Fri
 10235. M08 ID 74232 19121 01153 CW 24-12-2006 Sun 0400
 10235. M08 ID 74232 19121 01153 (Repeat of 0400z on
 10235m. This sked shou CW 24-12-2006 Sun
 10240 X06 6 note rising 123456 until 0809 AM 21-12-2006
 10344. M08 ID 27118 51578 77231 (Sending is rushed. Repeat
 of 1000z on 932 CW 9-12-2006 Sat 1100 (MS)
 10345. M08 M8a Cuban cut numbers in progress CW 6-12-
 2006 Wed 1100 (Red)
 10345. M08 ID 35291 75101 77512 (Repeat of 1000z on
 9323m) CW 12-12-2006 Tue 1100 (MS)
 10446. M08 ID 30672 75913 77511 CW 7-12-2006 Thu 1100
 10446. M08 ID 97462 78402 92071 (Start at 1102z) CW 21-12-
 2006 Thu 1100 (MS)
 10446. M08 ID 05492 78403 92641 CW 28-12-2006 Thu 1100
 10643 XPA standard call up long message very weak AM 12-
 12-2006 0820 (MUK)
 10871. MX Cluster beacon "D" CW 3-12-2006 0850 (AB)
 10871. MX Cluster beacon "D" CW 10-12-2006 0730 (FC)
 10871. MX Cluster beacon "P" CW 3-12-2006 0850 (AB)
 10871. MX Cluster beacon "P" CW 10-12-2006 0730 (FC)
 10871. MX Cluster beacon "S" CW 3-12-2006 0850 (AB)
 10872 MX Cluster beacon "C" CW 10-12-2006 0730 (FC)
 10872 MX C: Russian Naval Beacon, Moscow CW 15-12-
 2006 1221 (MPJ)
 10872. MX Cluster beacon "C" CW 3-12-2006 0850 (AB)
 11430. M23 555 (R10) (Very weak signal, barely perceptible.)
 CW 8-12-2006 Fri 1500 (MS)
 11430. M23 555 (R10) (Sat) (Barely audible - faded out) CW 9-
 12-2006 Sat 1505 (JPL)
 11430. M23 555 (R10) (Mon) (Barely Auditable - //12200 N/H)
 CW 11-12-2006 Mon 1505 (JPL)
 11430. M23 555 (R10) (Very weak signal QSA 1) CW 12-12-
 2006 Tue 1500 (MS)
 11431 XPA Severe QRM XPA2 detected under AM 12-12-2006
 0830 (MUK)
 11545. E03 weakly USB 24-12-2006 Sun 1400 (AS)
 11546. E03 USB 9-12-2006 Sat 1330 (SF)

11565	E10	EZI2 AM 1-12-2006 0830 (MUK)
12365.	S06	729 AM 27-12-2006 Wed 0700 (HFD)
12585	M89	V GM3Z GM3Z GM3Z DE PNW9 PNW9 CW 12-12-2006 1930
13527.	MX	Cluster beacon "D" CW 3-12-2006 0850 (AB)
13527.	MX	Cluster beacon "S" CW 3-12-2006 0915 (AB)
13528.	MX	Cluster beacon "C" CW 3-12-2006 0850 (AB)
14450.	M23	555 (R10) (Sun) (OTA 1442) CW 3-12-2006 Sun
14450.	M23	555 (R10) (Very weak signal) CW 4-12-2006 Mon
14450.	M23	555 (R10) (Mon) (Mostly U/R) CW 4-12-2006 Mon
14450.	M23	555 (R10) CW 5-12-2006 Tue 1430 (MS)
14450.	M23	555 (R10) CW 7-12-2006 Thu 1430 (MS)
14450.	M23	555 (R10) CW 8-12-2006 Fri 1430 (MS)
14450.	M23	555 (R10) (Sat) (Mostly U/R - Faded out) CW 9-12-2006 Sat 1432 (JPL)
14450.	M23	555 (R10) (Mon) CW 11-12-2006 Mon 1430 (JPL)
14450.	M23	555 (R10) (Weak signal QSA 2) CW 12-12-2006 Tue 1430 (MS)
14450.	M23	555 (R10) (Wed) (Barely Auditable) CW 13-12-2006 Wed 1430 (JPL)
14450.	M23	555 (R10) CW 17-12-2006 Sun 1430 (MS)
14450.	M23	555 (R10) (Sun) (Barely auditable) CW 17-12-2006 Sun 1430 (JPL)
14483	M42	Russian intel. Auto broadcasting multi figure group message to recipient "47" BAUDOT 200.33Bd/500Hz 31-12-2006 1234 (LDO)
14487.	E03	Extremely weak today, just out of the noise for few seconds now USB 14-12-2006 Thu 1300 (ZW)
14565.	M10	weak CW 26-12-2006 Tue 1200 (HFD)
16207	S06c	11468 11468 11468 (rptd) AM 14-12-2006 0200
16331.	MX	Cluster beacon "D" CW 3-12-2006 0850 (AB)
16331.	MX	Cluster beacon "S" CW 3-12-2006 0915 (AB)
16332.	MX	Cluster beacon "C" CW 3-12-2006 0850 (AB)
16332.	MX	Cluster beacon "C" CW 30-12-2006 1440 (AB)
18233.	E03a	Cherry Ripe USB 27-12-2006 Wed 1400 (CS)
18240	M42	Dep. of State Comms Moscow. Offline crypto to UNID embassy after 11177 00099.... MFSK-32/CROWD36 31-12-2006 1148 (LDO)
19452.	E03a	Cherry Ripe USB 27-12-2006 Wed 1400 (CS)
20047.	MX	Cluster beacon "D" CW 3-12-2006 0915 (AB)
20048.	MX	Cluster beacon "C" CW 3-12-2006 0915 (AB)

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 BNL Ben, Netherlands
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